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For A Small Entity

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A

Docket No. ML-1

Applicant(s) : Mikel A. Lehrman

For : METHODS AND APPARATUS FOR PROVIDING  
PORTABLE PHOTOGRAPHIC IMAGES

EXPRESS MAIL CERTIFICATION

"Express Mail" mailing label number **EI186825597US**

Date of Deposit April 6, 2000.

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I hereby certify that this transmittal letter and the other papers and fees identified in this transmittal letter as being transmitted herewith are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 on the date indicated above and are addressed to the Hon. Assistant Commissioner for Patents, Washington, D.C. 20231.

*Michael C. Secondo*  
MICHAEL C. SECONDO

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TRANSMITTAL LETTER FOR  
ORIGINAL PATENT APPLICATION

Sir:

Transmitted herewith for filing are the  
[X] specification; [X] claims; [X] abstract; [X] declaration;  
[X] power of attorney, for the above-identified patent  
application.

Also transmitted herewith are:

[X] 6 sheets of:

[ ] Formal drawings.

[X] Informal drawings. Formal drawings will be filed  
during the pendency of this application.

Certified copy(ies) of application(s)

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from which priority is claimed.

An assignment of the invention to \_\_\_\_\_.

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A check in the amount of \$40.00 to cover the recording fee.

Please charge \$40.00 to Deposit Account No. 06-1075 in payment of the recording fee. A duplicate copy of this transmittal letter is transmitted herewith.

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A Verified Statement Claiming Small Entity Status.

The filing fee has been calculated as shown below:

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FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
BASIC FEE				\$345.00
TOTAL CLAIMS	32 - 20 = 12		X \$ 9 =	\$108.00
INDEPENDENT CLAIMS	5 - 3 = 2		X \$ 39 =	\$ 78.00
[ ] MULTIPLE DEPENDENT CLAIMS			+ \$130 =	\$
			TOTAL	<u>\$531.00</u>

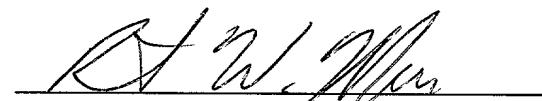
A check in the amount of \$531.00 in payment of the filing fee is transmitted herewith.

This application is being filed unaccompanied by a filing fee. The appropriate filing fee will be paid in response to a Notice to File Missing Parts, pursuant to 37 C.F.R. § 1.53(f).

The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 C.F.R. § 1.16, in connection with the paper(s) transmitted herewith, or credit any overpayment of same, to deposit Account No. 06-1075. A duplicate copy of this transmittal letter is transmitted herewith.

Amend the specification by inserting before the first line the sentence: -- This is a [ ] continuation-in-part, of application Serial No.: \_\_\_\_\_, filed \_\_\_\_\_ entitled \_\_\_\_\_.

Please charge \$ \_\_\_\_\_ to Deposit Account No. 06-1075 in payment of the filing fee. A duplicate copy of this transmittal letter is transmitted herewith.



Robert W. Morris  
Registration No. 36,613  
Attorney(s) for Applicant(s)

FISH & NEAVE  
Customer No. 1473  
1251 Avenue of the Americas  
New York, New York 10020-1104  
Tel.: (212) 596-9000

EXPRESS MAIL NO.: EI186825597US

Applicant or Patentee: Mikel A. Lehrman Attorney's  
Serial or Patent No.: \_\_\_\_\_ Docket No.: ML-1  
Filed or Issued: Filed Herewith  
For: METHODS AND APPARATUS FOR PROVIDING PORTABLE PHOTOGRAPHIC IMAGES

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 C.F.R. 1.9(f) AND 1.27(b)) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 C.F.R. 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled METHODS AND APPARATUS FOR PROVIDING PORTABLE PHOTOGRAPHIC IMAGES described in:

The specification filed herewith  
 Application Serial No. \_\_\_\_\_, filed \_\_\_\_\_  
 Patent No. \_\_\_\_\_, issued \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 C.F.R. 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 C.F.R. 1.9(d) or a nonprofit organization under 37 C.F.R. 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

No such person, concern, or organization  
 Persons, concerns or organizations listed below\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 C.F.R. 1.27)

FULL NAME \_\_\_\_\_

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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any

maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR  
Mikel A. Lehrman

NAME OF INVENTOR

NAME OF INVENTOR

Signature of Inventor

Signature of Inventor

Signature of Inventor

Date

Date \_\_\_\_\_

Date \_\_\_\_\_

4/6/00

## INVENTOR INFORMATION

Inventor One Given Name:: Mikel A  
Family Name:: Lehrman  
Postal Address Line One:: 103 East 86th Street, Apt. 3C  
City:: New York  
State or Province:: NY  
Country:: USA  
Postal or Zip Code:: 10028  
Citizenship Country:: USA

## CORRESPONDENCE INFORMATION

Correspondence Customer Number:: 1473  
Fax One:: 212.596.9090  
Electronic Mail One:: rmorris@fishneave.com

## APPLICATION INFORMATION

Title Line One:: METHODS AND APPARATUS FOR PROVIDING PORT  
Title Line Two:: ABLE PHOTOGRAPHIC IMAGES  
Total Drawing Sheets:: 6  
Formal Drawings?:: No  
Application Type:: Utility  
Docket Number:: ML-1  
Secrecy Order in Parent Appl.?:: No

## REPRESENTATIVE INFORMATION

Representative Customer Number:: 1473  
Registration Number One:: 26183  
Registration Number Two:: 36613

Source:: PrintEFS Version 1.0.1

METHODS AND APPARATUS FOR  
PROVIDING PORTABLE PHOTOGRAPHIC IMAGES

Background of the Invention

The present invention relates to methods and  
5 apparatus for keeping and displaying photographic  
images. More particularly, the present invention  
relates to the storage of digital photographic images  
in portable devices that may, for example, be carried  
in a wallet or purse.

10 Photographs, since their inception, have  
always had a special place in society. They provide a  
means for capturing special moments and/or places in  
people's lives, or are utilized in commercial  
applications to better explain things where "a picture  
15 is worth a thousand words." In today's society, the  
immense growth of digital photography and the Internet  
has caused explosion the storage and transmission of  
photographic images. For example, it is now common for  
pictures of newborn children to be displayed on a  
20 family website only hours after the birth has occurred.  
In other instances, family photographs are exchanged as  
e-mail attachments to family members in different parts  
of the world.

25 While the use of the Internet and digital  
images has made it easier to distribute photographic  
images, such techniques have not been able to address

the problem of having photographs in one's possession at any place and at any time. For example, when a purse or wallet is open, there is typically one or more family photographs. The photos are often old and worn 5 because they may simply be in a stack. In other circumstances, one of the pictures may be displayed all of the time behind a transparent piece of plastic, however, these windows also yellow and appear to lose some of their transparency over time. Moreover, every 10 time the user wants to show the pictures to someone else, they must be pulled out of the purse or wallet. This results in additional wear and tear on the pictures.

It should also be noted that pictures are 15 commonly developed in larger sizes than wallet size, such as, for example, four inches by six inches. When someone wants to keep a particular picture in their possession, they either cut the larger picture to fit the wallet, or they must take the negative to a photo 20 processor and have a wallet-sized print made. In view of the difficulty in getting proper "wallet-sized" pictures, the pictures in the purse or wallet typically become quickly outdated, and often are never replaced.

For at least the above reasons, it is an 25 object of the present invention to provide methods and apparatus that enable people to easily carry multiple photographic images.

It is also an object of the present invention to provide methods and apparatus for storing and 30 displaying photographic images in which the images can easily be updated.

It is still a further object of the present invention to provide methods and apparatus for storing and displaying a fixed set of photographic images.

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### Summary of the Invention

The above and other objects of the present invention are accomplished by the methods and apparatus described herein in a portable electronic photo album.

5 The electronic photo album of the present invention includes a small, portable, flexible display unit, and a limited set of buttons or like devices for determining which image is shown on the display. The display is preferably a somewhat flexible color liquid-  
10 crystal display (LCD) that may be supported by a thin, hard shell. The device is small enough, and light enough to be carried in a wallet or purse, and is substantially resistant to damage that may be caused, for example, by someone sitting on the wallet. Thus,  
15 it may be preferable for the device to be approximately the size of a standard credit card.

The portable photo album of the present invention may be downloadable from a computer using standard or specialized interface cables. It may be preferable, for the convenience of the user, to utilize the same interface cable as is used with many digital cameras. For example, Hewlett Packard manufactures a standard nine-pin RS-232 interface cable, which may be used with many digital cameras, such as the HP Photosmart C200 Digital Camera. The portable photo album may also be downloaded directly from a digital camera, from digital still images captured by a video camera, or from image stored on conventional FLASH memory cards (that currently are in wide spread use with digital cameras). It should also be noted that while digital images are what is being stored, conventional photographs may also be used, provided they are converted to digital form by using, for example, a flat bed scanner.

In other embodiments of the present invention, digital images are permanently preloaded and stored on the portable photo album -- i.e., users do not have the ability to load pictures into the device.

5 These images may be, for example, photographs of a particular band, whereby the portable photo album would be sold to fans of that particular band as trading cards are traditionally sold. The applications for permanently stored images are wide-ranging, and may  
10 include, for example, sports teams, sports highlights, a new line of clothes offered by a particular retailer (in which case, the portable photo albums may be given away as part of an advertising campaign), or a series of photos depicting children's characters or nursery  
15 rhymes.

Other applications of non-user loadable photo albums may include being directly integrated with a credit card, whereby advertising would be displayed every time the card was used. In that case, card  
20 issuers, may issue new cards more frequently than is currently done as advertisers change. Additionally, if "smart chip" technology is utilized -- smart chips, which are well known in the area of credit cards, are ultra-thin processors that are located on the face of a  
25 credit card. Information may be downloaded into these processors using, for example, bank machine kiosks. Under these circumstances, the credit card issuer could update the photo album advertising whenever the user utilizes one of these kiosks.

30 One advantage of a permanently fixed photo album, is the possible reduction in hardware requirements. Essentially, all that is needed is memory to store the images, working memory that includes what is being displayed, and processing

circuitry that swaps pages from stored memory to display memory. The processor need not be a microprocessor, but instead could be a simple programmable logic device (PLD), such as those 5 manufactured and sold by the Altera Corporation of San Jose, California. Moreover, the memory on the fixed photo albums can be optimized based on the number and resolution of the images being stored, to reduce memory costs.

10 Additional embodiments of the present invention may also include the storage of video clips instead of digital still images. These clips may be on the order of five to ten seconds, or more, whereby the length of time of the clip is determined, once again, 15 based on the resolution of the images being displayed. For example, parents might want to keep a video clip of their child's first steps, assuming they were lucky enough to have the video camera ready to capture the moment, in their pocket. An additional consideration 20 for video clips is frame rate, which contributes to the smoothness of the displayed video. The video clips may be downloaded from a computer, just as described above with respect to still images, or they may be downloaded directly from a digital video camera, or conventional 25 video camera that includes the ability to capture digital clips.

The portable photo albums of the present invention also may include the ability to produce sound via micro or sub-micro electronic speaker components and audio chips. The integration of sound with still images and/or video clips may provide the users with advanced features, but the devices themselves may be more expensive and/or heavier and bulkier than silent photo albums. Such devices may be used, for example,

as a singing birthday card in which family photos are displayed, or a customized birthday card in which the images/video clips are taken directly from the birthday party itself.

5

### Brief Description of the Drawings

The above and other objects and advantages of the present invention will be apparent upon consideration of the following detailed description, taken in conjunction with accompanying drawings, in which like reference characters refer to like parts throughout, and in which:

15 FIG. 1A is a schematic diagram showing one embodiment of a portable photographic image storage device constructed in accordance with the principles of the present invention;

FIG. 1B is a schematic block diagram of representative circuitry of the portable photographic image storage device of FIG. 1A;

20 FIG. 1C is a schematic diagram showing an alternate embodiment of a portable photographic image storage device constructed in accordance with the principles of the present invention.

FIG. 2 is a three-dimensional illustration of  
25 one embodiment of a portable photographic storage  
system utilizing the image storage device of FIG. 1;

FIG. 3 is a flow diagram of the process for loading digital images into the portable photographic storage system of FIG. 1; and

30 FIG. 4 is a three-dimensional illustration of an alternate embodiment of a portable photographic image storage wallet constructed in accordance with the principles of the present invention.

### Detailed Description of the Drawings

The methods and apparatus of the present invention for providing a portable system to store photographic images enable individuals to carry 5 multiple digital photographs in a compact device that can easily be stored on one's person. The device is preferably credit card-sized, and contains enough memory to store multiple images. Of course, persons skilled in the art will appreciate that the number of 10 images that may be stored may also vary depending on the resolution of the stored image, which affects the size of the electronic file corresponding to the image.

1A shows a general representation of a portable device for storing one or more photographic images. Photocard 100, is preferably sized on the order of a credit card, or other like device, so that it can easily fit in existing wallets and purses. Photocard 100 includes a relatively rigid case 102 that may be utilized to provide the support structure for display 104. Case 102 should be rigid enough to protect display 104, but is preferably at least as flexible as a credit card so that it may easily be stored in a wallet without providing discomfort to the user. Display 104 is preferably a flexible liquid crystal display that can provide high resolution color images. Display 104 should also be resilient enough that it can withstand the stress typically associated with in a wallet, such as, for example, being sat on for an entire day.

30 Photocard 100 also includes one or more buttons, such as index buttons 106 and 108. As illustrated in FIG. 1A, button 106 is intended to allow a person to review digital images going backwards in sequence, while button 108 is intended to allow a

forward review of images. Persons skilled in the art will appreciate that, for example, to reduce cost and manufacturing complexity, a single button may be utilized to sequence through the stored images.

5 Additionally, photocard 100 may be implemented without any physical buttons (in which case, buttons 106 and 108 would simply not be present), and instead may be implemented with one or more sequence "virtual buttons" which appear on display 104 and are

10 implemented in software, rather than hardware. Under those circumstances, display unit 104 would be a touch screen responsive to touch inputs from the user.

Moreover, photocard 100 may also include a magnetic strip 132 (which is located on the reverse side of the

15 housing, see, for example, FIG. 1C ), as is found on credit cards, so that photocard 100 could be used as a credit card, whereby the displayed images could be, for example, advertisements or promotions.

One of the advantages of photocard 100 is  
20 that it can fit inside a pocket, wallet, or purse. Another advantage is that it is a dedicated unit, constructed to simply display digital photographic or similar images. Accordingly, hardware requirements for photocard 100 are significantly reduced over  
25 conventional electronic devices. For example, conventional electronic devices often require microprocessors or other advanced processing circuitry to perform various functions. Photocard 100, on the other hand, only requires processing circuitry that  
30 simply moves data in to and out of memory.

FIG. 1B shows an example of the circuitry that may be utilized to implement photocard 100. The circuitry includes memory circuitry 120, processing circuitry 122, display memory 124, and display

circuitry 126. Memory 120 is used to store the digital images. Data is downloaded to it, or uploaded from it, by processing circuitry 122 along a bus, as is well known. The processing circuitry 122, takes blocks or 5 pages of data from memory 120, that represent a digital image to be displayed on display 104. The data is then loaded into display memory 124 by processing circuitry 122, and a signal is provided to the display circuitry 126 (which typically includes driver 10 circuitry). Display circuitry 126 then displays the data stored in display memory 124 on display 104.

The processing circuitry requirements of photocard 100 are significantly reduced over conventional electronic devices because a majority of 15 the processing is simply memory access. No processing of the digital images is performed by photocard 100. Accordingly, processing circuitry 122 may be implemented using, for example, a programmable logic device (PLD), such as those sold by the Altera 20 Corporation, or application specific integrated circuits (ASICs).

25        ASICS, in particular, are integrated circuits that are designed to perform a specific function, as opposed to devices which may be programmed to perform a variety of functions. ASICS are substantially less expensive, and require substantially less supporting circuitry than conventional processing circuitry. Moreover, persons skilled in the art will appreciate that the present invention may be implemented using a 30 single memory instead of memories 120 and 124. Under those circumstances, the processing circuitry could simply be designed to display a the data from a given location upon startup. Then, additional images are

displayed by simply incrementing, or decrementing, the memory location a single page.

FIG. 1C shows another embodiment of the present invention in photocard 130. Photocard 130 may 5 include everything previously described with respect to photocard 100, and shown in FIG. 1A. Photocard 130, however, includes body portion 134, which is substantially similar in size to a credit card, except that a segment is missing from the backside 10 of body 134. The missing segment, as is shown in FIG. 1C, is filled in by a memory card 136, such as the FLASH memory cards currently utilized with many digital cameras. As shown in FIG. 1C, FLASH memory card 136 has been placed within the missing segment of body 134 15 so that the two portions, when mated together, are approximately the size and width of a credit card. Alternately, if the memory portion need be slightly thicker than a conventional credit card, the magnetic stripe portion of body 134 could still be the same 20 size as a credit card so that magnetic stripe 132 could be swiped using conventional credit card readers. FLASH memory card 136 connects to the circuitry of photocard 130 via connector 138 (shown as a dashed line to indicate that it is, when mated, within body 134).

One advantage of photocard 130 is that no 25 downloading capability need be provided. All photo processing and image storage would occur at the computer or digital camera (video or still), with the images to be displayed being loaded into the FLASH 30 card. Photocard 130 need only have memory to display images, such as where images are paged from the FLASH card into display memory, and the LCD displays what is in display memory. Alternately, the dedicated processing circuitry could be configured to display

images directly from FLASH memory card 132, in which case photocard 130 would have no memory at all. For shipping, storage, and carrying when no images are available, a dummy plug (not shown) could be utilized 5 that plugs into the same connector as connector 138.

FIG. 2 shows an illustrative example of how a photocard 100 device could be used in an image processing system 200. In addition to photocard 100, FIG. 2 also shows a camera 202 and a computer 210. 10 Camera 202 is preferably a digital camera, however, conventional film cameras may also be used without departing from the spirit of the present invention. Camera 202 may include a built-in flash unit 204, or it may be utilized with a conventional stand-alone flash 15 unit (not shown). Computer 210 may be any type of computer running any type of operating system ("OS"), such as the Macintosh™ OS or Windows™ OS. Computer 210 also includes a monitor 212, that is preferably a color monitor, as well as a keyboard (not shown) and cursor 20 input system, such as a mouse (not shown). Computer 210 may also include a conventional scanner (not shown), which may be used to scan conventional photographs for conversion into digital images.

Computer 210 includes software, besides 25 the OS, that may be used to manipulate digital images. One well known software application for this purpose is, for example, Photoshop™ by Adobe. Digital image manipulation software permits a user to perform tasks such as, cropping and rotation of digital images, as 30 well as image quality enhancements (such as the elimination of "red eye"). Moreover, these programs also typically provide the user with the ability to alter the digital images by, for example, placing one person's face on someone else's body. Another

important feature of these programs is the ability to save the digital image in a different format and/or resolution than the image taken by camera 202 or scanned by the scanner.

5           Digital image manipulation programs also typically include the ability to provide add-on software. One such piece of add-on software that may be provided in conjunction with the present invention is a software guide for manipulating images so that  
10          they may be best displayed on photocard 100. For example, the add-on software may include the ability to display a window on monitor 212 that displays exactly what would appear if the same image were displayed on photocard 100 on display 104, in exactly the same size.  
15          Additionally, the add-on software could also inform the user how much memory would be required for storage and display of the digital image at varying resolutions and color quality. For example, it is well known that a digital image displayed in "millions of colors" takes  
20          up significantly more memory than an image displayed in 16 or 256 colors. While photocard 100 can be provided with enough memory to display images at even the highest of resolutions, the amount of memory provided is directly tied to the overall cost of the  
25          device. Accordingly, some models may offer, for example, sixteen megabytes of memory, while others may only offer four megabytes.

          Camera 202 may be connected to computer 210 for downloading digital pictures into computer 210 via  
30          a cable 214, which has a connector 216 for connection to camera 202 (and an additional connector (not shown) for connection to computer 210. Also shown in FIG. 2 are dashed lines representing cable 214' having connector 216'. The dashed lines are intended to

indicate that the cable used to connect camera 202 to computer 210 may in fact be the same cable that also connected photocard 100 to computer 210. While such a configuration may be preferable, it is not required to practice the present invention. One of the advantages of having a single cable that connects to both camera 202 and photocard 100 is the ability to leave the single cable connected to computer 210, regardless of what is being connected to it. As is well known, often, computers have a limited number of I/O ports that cables can be connected to. Thus, the use of a common cable and interface for both the camera and photocard eliminates the undesirable requirement of constantly having to gain access to the back of computer 210 for reconfiguration of the cables.

Use of system 200 is described with respect to the flow diagram shown in FIG. 3. Initial step 302 for the use of image processing system 200 is that one or more digital images are obtained. These images may 20 be obtained via a camera such as camera 202 shown in FIG. 2. If the camera used is a digital camera, then the photographs are already in digital format, and the process may continue. If, however, the photographs were taken with a conventional camera, the images must 25 be digitized. This can be done in many known ways. For example, the standard photograph may be scanned using a conventional flat bed scanner and scanner software. Alternately, the film may be sent to a photoprocessor such as Kodak™, who offers individuals 30 the ability to receive their photographs in several digital formats, such as CD-rom, conventional floppy disks, and as downloadable files on the Internet. Under any of those circumstances, the image is now available in a digital format.

The second step 304 is that the digital image is loaded into computer 210, via, for example, cable 214. While the present invention includes this step, persons skilled in the art will appreciate that 5 individuals may also load images directly from a digital still or video camera into photocard 100. The elimination of the computer, however, may reduce the quality of the images displayed on photocard 100. Once the digital images are loaded into computer 210, they 10 may be manipulated in step 306 to further enhance the images that are to be displayed on photocard 100. For example, the image may be cropped and the number of colors reduced so that an increased number of images may be loaded into photocard 100, based on the fixed 15 memory of the device.

Once the images have been manipulated, a program may be run from the computer that, in a step 308, loads the images into photocard 100, either sequentially, or in a particular order that may be set 20 up by a user through software located on computer 210. Another alternate method of transferring images into photocard 100 may be through the use of infrared I/O port 112 (shown as a dashed box, indicating that this may be optionally added to photocard 100, as 25 illustrated in FIG. 1A). Computers and/or digital cameras could also include infrared I/O ports so that digital images can simply be "beamed" from one device to another.

FIG. 4 shows an alternate embodiment of the 30 present invention in photocard wallet 400. Photocard wallet 400 includes a body 401 that may be formed of a material such as leather into a three-fold configuration (as shown) or other configurations, such as a two-fold (not shown). Wallet 400 includes four sections,

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which are labeled sections 402, 404, 406, and 408. Section 402 refers to the area in the wallet where money is usually located. Sections 406 and 408 are conventional wallet sections in that they may include,  
5 for example, slots 410 which are configured to carry materials such as credit cards 412. Built into section 404, however, is photocard 100 which can display digital photographic images. Persons skilled in the art will appreciate that, for convenience and clarity, while the previous discussion of photocard 100 is equally applicable with respect to wallet 400, the photocard actually placed within wallet 400, may be different than that previously described. For example, paging switches 106 and 108 may be located in a  
10 different location so that they are aligned with wallet 400 when it is open as shown in FIG. 4.  
15

Persons skilled in the art will thus appreciate that the present invention can be practiced by other than the described embodiments, which are presented for purposes of illustration and not of limitation, and the present invention is limited only by the claims which follow.

I CLAIM:

1. A portable electronic photo album comprising:

a housing structure that fits within a wallet;

an electronic display, located within the housing, capable of displaying digital images;

memory, located within the housing, that stores one or more digital images; and

dedicated processing circuitry, located within the housing and being coupled to the memory and the display, the processing circuitry being substantially dedicated to displaying on the electronic display the one or more digital images stored in memory.

2. The portable photo album of claim 1, wherein the processing circuitry is an application specific integrated circuit (ASIC).

3. The portable photo album of claim 1, wherein the processing circuitry is a programmable logic device (PLD).

4. The portable photo album of claim 1, wherein the housing includes at least one user input device for advancing which digital image is displayed on the electronic display.

5. The portable photo album of claim 1, wherein the electronic display also displays at least one user input location for advancing which digital image is displayed on the electronic display.

DO NOT RE-ENTER

6. The portable photo album of claim 1, wherein the electronic display is a liquid crystal display.

7. The portable photo album of claim 6, wherein the liquid crystal display is substantially flexible.

8. The portable photo album of claim 1 further comprising an electrical connector mounted to the housing, and wherein the digital images are loaded into memory via a cable connected to the connector.

9. The portable photo album of claim 1 further comprising an infrared I/O port, and wherein the digital images are loaded into memory via the infrared I/O port.

10. The portable photo album of claim 1 further comprising a FLASH memory connector, and wherein the digital images are loaded into memory via the a FLASH card connector to the FLASH memory connector.

11. A portable electronic photo album system comprising:

a portable electronic photo album that includes an electronic display, memory, and processing circuitry dedicated to displaying one or more digital images stored in memory;

means for capturing the one or more digital images; and

a computer that receives the captured images and sends the images to the portable photo album for storage in memory.

12. The portable photo album system of claim 11 further comprising:

a common interface cable that is connected to the computer and one of the means for capturing and the portable photo album.

13. The portable photo album system of claim 11, wherein the means for capturing is a digital still camera.

14. The portable photo album system of claim 11, wherein the means for capturing is a scanner.

15. The portable photo album system of claim 11, wherein the means for capturing is a CD-rom which includes digital images.

16. The portable photo album system of claim 11, wherein the means for capturing is a floppy disk which includes digital images.

17. The portable photo album system of claim 11, wherein the computer includes application software for manipulating the captured digital images.

18. The portable photo album system of claim 17, wherein the computer includes a monitor, and the application software includes the ability to display on the monitor the one or more digital images

exactly as they appear when displayed on the electronic display of the portable photo album.

19. An electronic photo album wallet comprising:

a body that includes one or more pockets for storing credit cards, and one or more pockets for storing money; and

a portable electronic photo album that includes:

a housing;

an electronic display, located within the housing, capable of displaying digital images;

memory, located within the housing, that stores one or more digital images; and

dedicated processing circuitry, located within the housing and being coupled to the memory and the display, the processing circuitry being substantially dedicated to displaying on the electronic display the one or more digital images stored in memory.

20. The wallet of claim 19, wherein the dedicated processing circuitry is an application specific integrated circuit (ASIC).

21. The wallet of claim 19, wherein the dedicated processing circuitry is a programmable logic device (PLD).

22. A method for displaying one or more digital images on a portable photo album comprising:  
storing one or more digital images in memory;

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utilizing dedicated processing circuitry to extract one of the stored images from memory, the dedicated processing circuitry being substantially dedicated to displaying on an electronic display the one or more digital images stored in memory; and

displaying the extracted digital image on the electronic display.

23. The method of claim 22, wherein the dedicated processing circuitry is an application specific integrated circuit (ASIC).

24. The method of claim 22, wherein the dedicated processing circuitry is a programmable logic device (PLD).

25. The method of claim 22, wherein storing is accomplished by inputting the one or more digital images via a conventional interface cable.

26. The method of claim 25, wherein the conventional interface cable is an interface cable that also may be connected to a digital camera.

27. The method of claim 22, wherein storing is accomplished by inputting the one or more digital images via an infrared I/O port.

28. The method of claim 22, wherein storing is accomplished by connecting a FLASH memory card to a connector on the housing and the images are read into memory from the FLASH card.

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29. The method of claim 22, wherein storing is accomplished external to the photo album by loading images into a FLASH card, and wherein the processing circuitry extracts images directly from the FLASH card.

30. A portable electronic photo album comprising:

a housing structure that fits within a wallet;

an electronic display, located within the housing, capable of displaying digital images;

a memory card, located external to the housing and mateable with the housing, that stores one or more digital images; and

dedicated processing circuitry, located within the housing and being coupled to the display and to the memory card when the memory card is mated to the housing, the processing circuitry being substantially dedicated to displaying on the electronic display the one or more digital images stored in memory.

31. The portable electronic photo album of claim 30, further comprising:

display memory, the processing circuitry acting to swap image data from the memory card into the display memory for display on the electronic display.

32. The portable electronic photo album of claim 30, wherein the processing circuitry displays image on the electronic display directly from image data stored on the memory card.

METHODS AND APPARATUS FOR  
PROVIDING PORTABLE PHOTOGRAPHIC IMAGES

### Abstract Of The Disclosure

Methods and apparatus for providing portable photographic images are described. The present invention includes a small, portable electronic display unit that may be placed within a wallet or purse. The display unit may include an input port for downloading digital images from a computer or digital camera. The display unit may also include one or more buttons to provide a user with the ability to select an image for display from a given set of digital images that have been stored in memory. The display unit may be preloaded with one or more digital images, or it may be configured to be loaded by a user. The digital images may, for example, include still digital photographs or short video clips that have been captured from a digital camera.

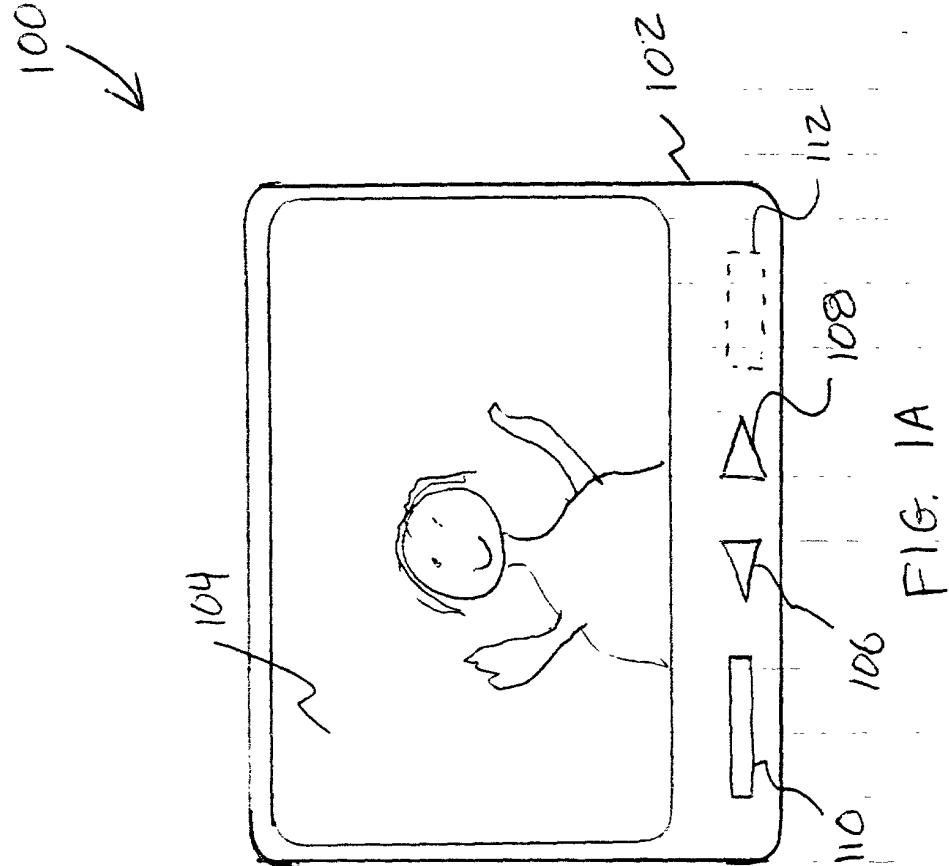


FIG. 1A

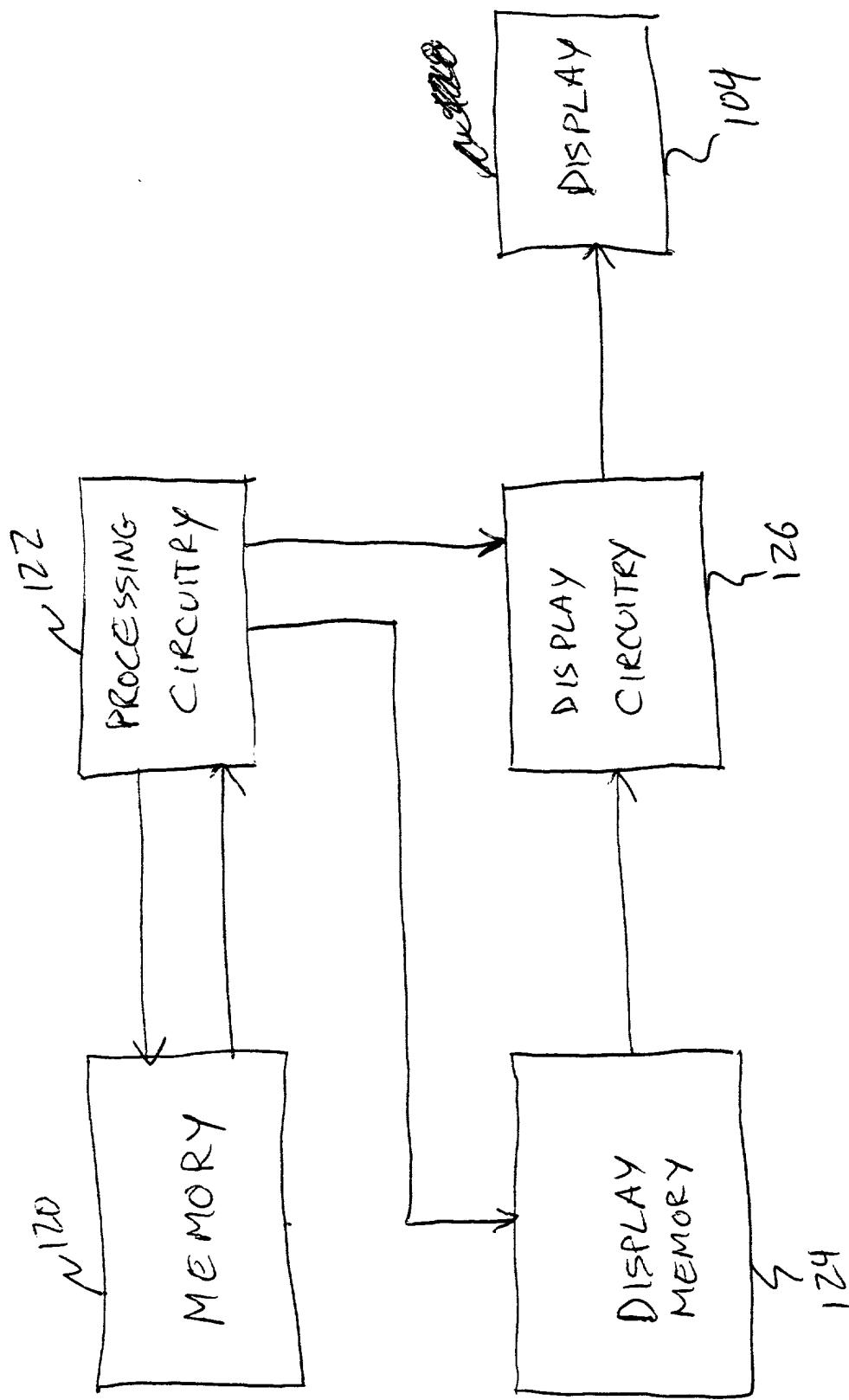


FIG. 1B

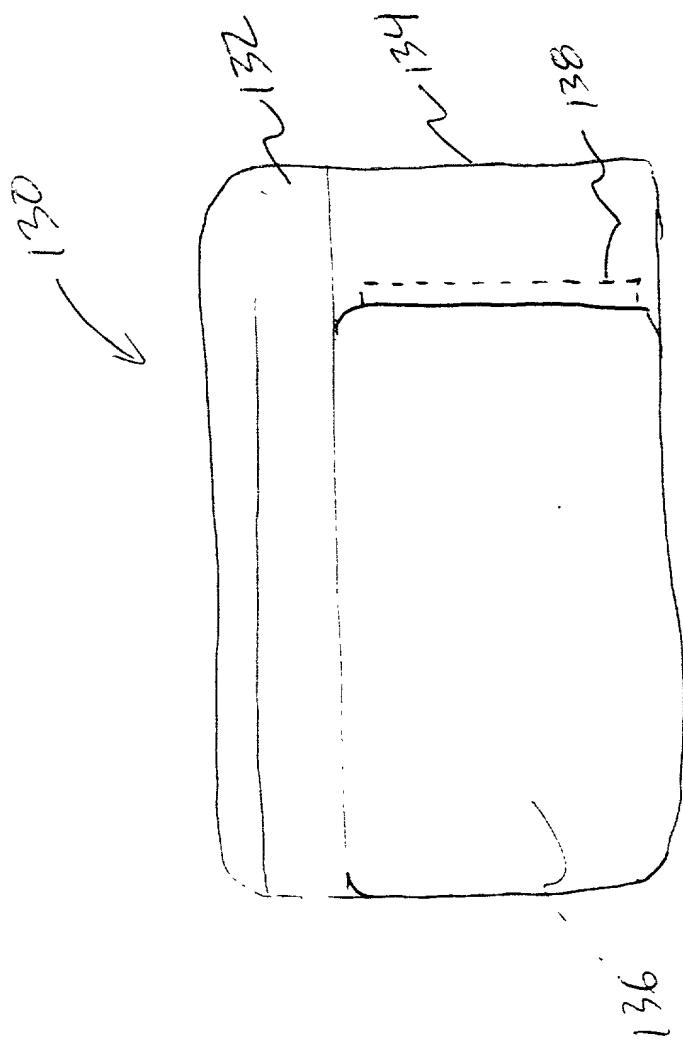


FIG. 1C

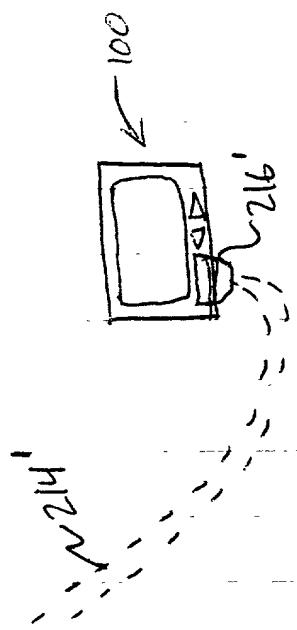
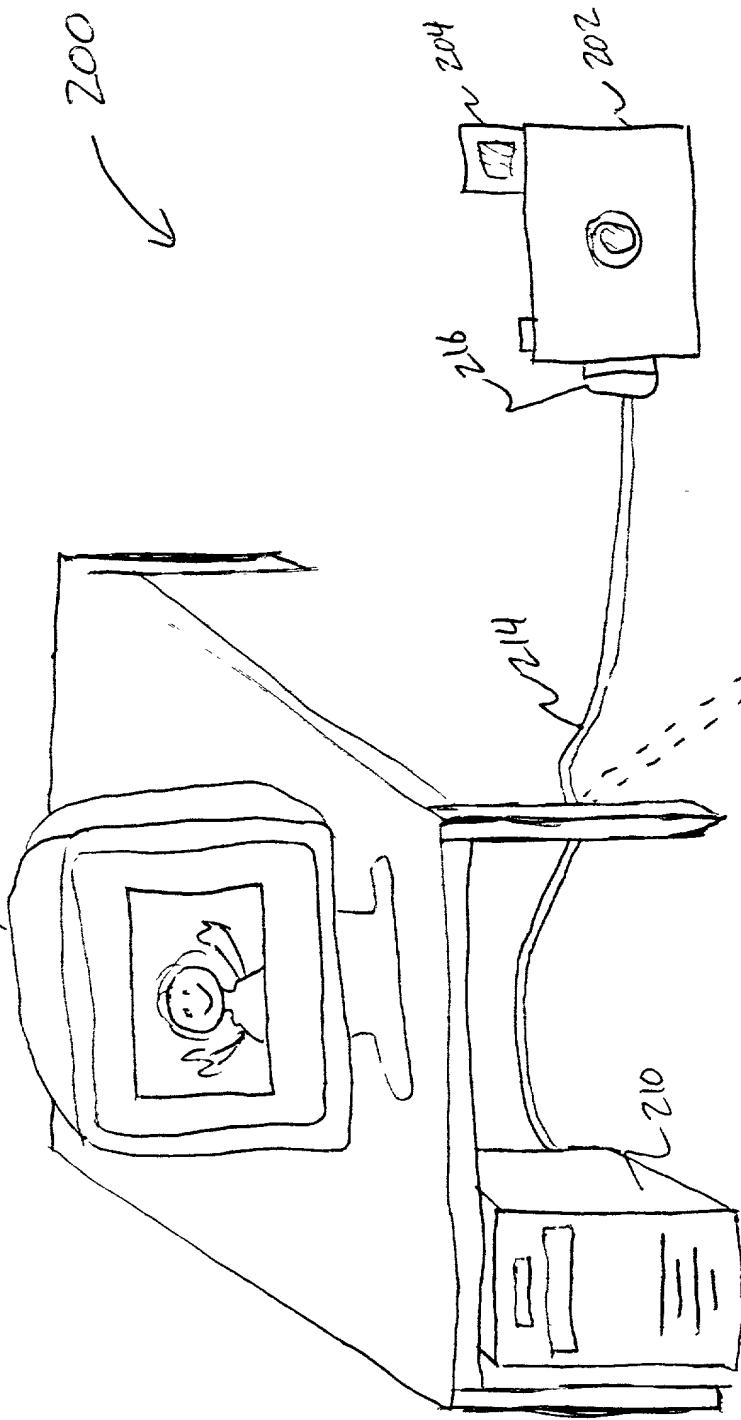


FIG. 2

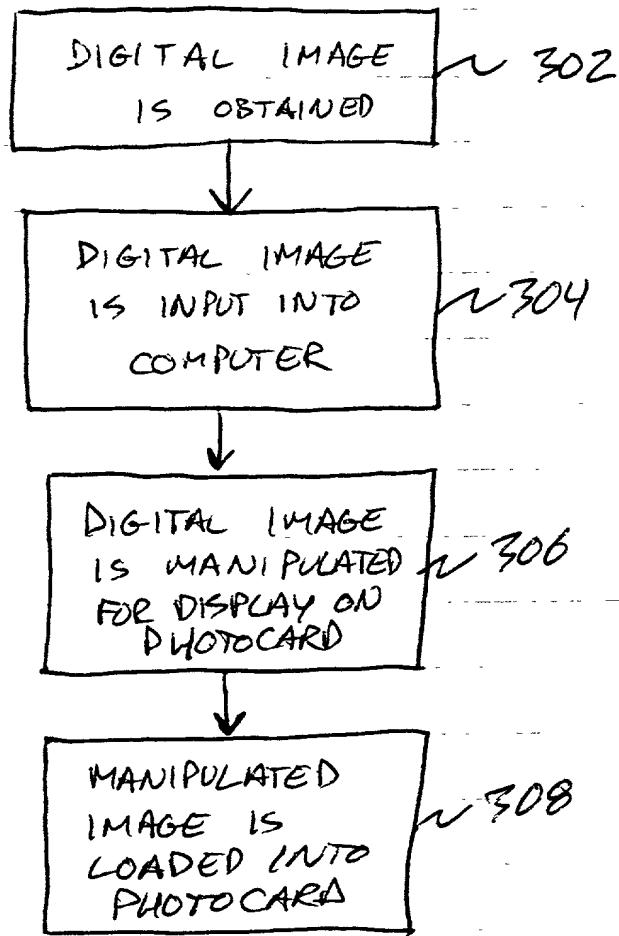


Fig. 3

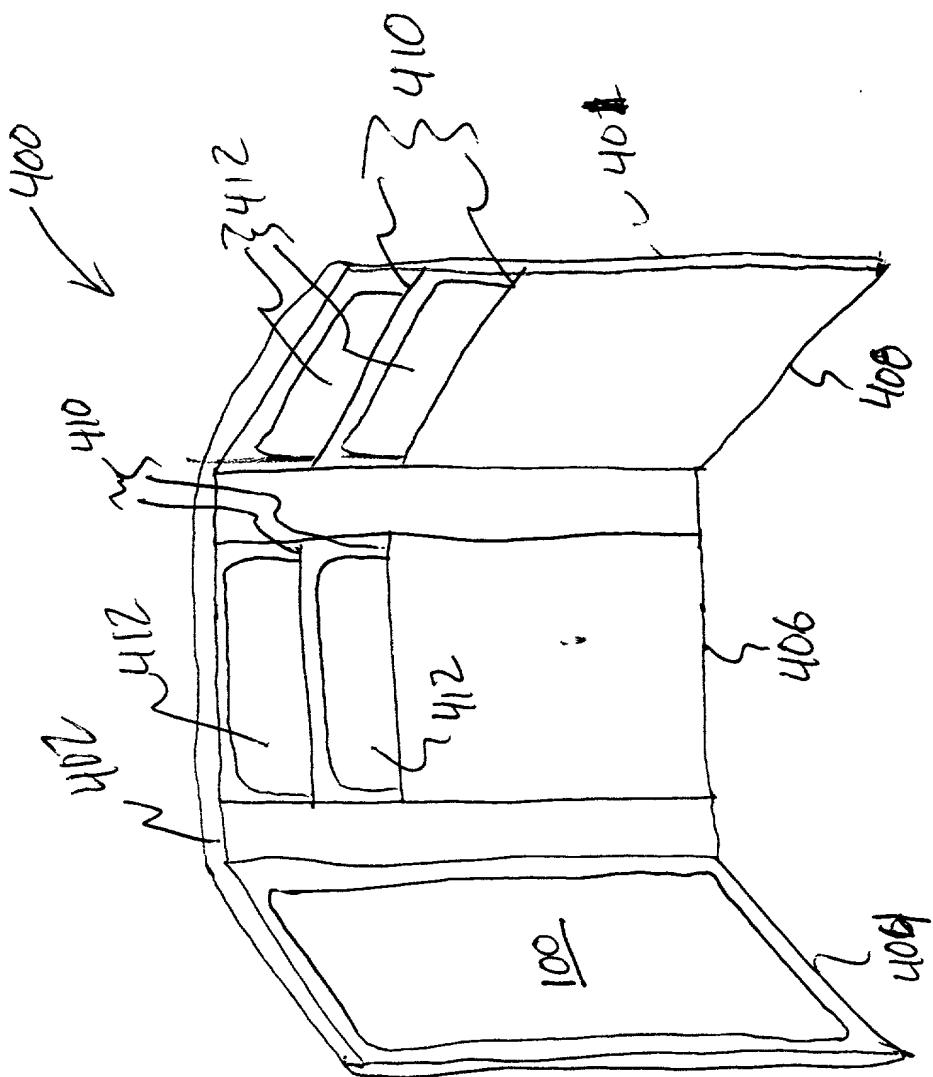


FIG. 4

EXPRESS MAIL NO.: E1186825597US  
ML-1

**DECLARATION AND POWER OF ATTORNEY**  
**FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHODS AND APPARATUS FOR**  
**PROVIDING PORTABLE PHOTOGRAPHIC IMAGES**

the specification of which:

(check  is attached hereto  
one)

[ ] was filed on \_\_\_\_\_ as  
Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_.  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I do not know and do not believe that the invention was ever patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application.

I do not know and do not believe that the invention was in public use or on sale in the United States of America more than one year prior to this application.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority <u>Claimed</u>	
(Number)	(Country)	(Day/Month/Year Filed)	[ ]	[ ]
			Yes	No
			[ ]	[ ]
			Yes	No
			[ ]	[ ]
			Yes	No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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As a named inventor, I hereby appoint the following attorneys or agents to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith:

Robert R. Jackson, Esq. - Reg. No. 26,183

Robert W. Morris, Esq. - Reg. No. 36,613

Send correspondence to:

Robert W. Morris

FISH & NEAVE

1251 Avenue of the Americas  
New York, New York 10020-1104

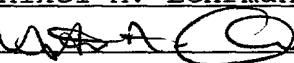
Direct telephone calls to:

Robert W. Morris

(212) 596-9000

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor Mikel A. Lehrman

First Inventor's signature 

4/6/00  
Date

Residence 103 East 86th Street, Apt. 3C, New York, NY 10028

Citizenship USA

Post Office Address 103 East 86th Street, Apt. 3C

New York, NY 10028

Full name of second joint inventor \_\_\_\_\_

Second Inventor's signature \_\_\_\_\_

Date

Residence \_\_\_\_\_

Citizenship \_\_\_\_\_

Post Office Address \_\_\_\_\_

Full name of third joint inventor \_\_\_\_\_

Third Inventor's signature \_\_\_\_\_

Date

Residence \_\_\_\_\_

Citizenship \_\_\_\_\_

Post Office Address \_\_\_\_\_